We Claim:

1. A method for producing components from high-temperature-proof fiber reinforced composite ceramic, which comprises the steps:

producing shaped tapes from moldable surface formations containing carbon fibers, each of the shaped tapes having at least one surface;

juxtaposing at least two of the shaped tapes by facing the surfaces of the at least two of the shaped tapes to face one another and adjoining portions of the surfaces of the shaped tapes facing one another at contact zones, including an adhesive at least on the portions of the shaped tapes forming the contact zones, joining the carbon fibers, and molding the shaped tapes with pressure during heating;

producing a force-locking connection between the tapes in the portions of the shaped tapes at the contact zones to form a prebody by one of:

heating and simultaneous solidifying under thermal and pressure influences, and

hardening;

carbonizing the prebody at a temperature between 750 and 1200 °C in a non-oxidizing atmosphere;

at least once post-compacting the prebody by introducing a substance forming a carbon residue when heated in the non-oxidizing atmosphere, and subsequently carbonizing the prebody;

separating a region of each of the shaped tapes outside the contact zones from adjoining tapes with graphite spacers; and

inserting the shaped tapes into a clamping device formed substantially of graphite to secure the tapes and the prebody formed therefrom.

2. The method according to claim 1, wherein the shaped tapes are corrugated.

3. The method according to claim 1, wherein the shaped tapes are bent.

4. The method according to claim 1, wherein the shaped tapes are meandering.

5. The method according to claim 1, wherein the adhesive is a glue.

6. The method according to claim 1, wherein the adhesive is a binder.

7. The method according to claim 1, wherein the introducing of the substance involves infiltrating the prebody with the substance.

8. The method according to claim 1, wherein the introducing of the substance involves impregnating the prebody with the substance.

9. The method according to claim 1, wherein the substance being introduced is meltable.

10. The method according to claim 1, wherein the substance being introduced is gaseous.

11. The method according to claim 1, which further comprises including a hardenable binder in the shaped tapes.

12. The method according to claim 1, wherein the shaping of the shaped tapes occurs in the clamping device by pressing a die profiled at least on one side onto the moldable surface formations containing the carbon fibers.

13. The method according to claim 12, which further comprises pressing the moldable surface formation containing the carbon fibers with the die having a profile at least on one side onto a front side of a prebody including spacers, the spacers being partly-open on a side facing the moldable surface formations containing the carbon fibers to form a tape corrugated in conformance with the profile of the die.

14. The method according to claim 13, which further comprises joining the formed tape to the prebody by thermal hardening.

15. The method according to claim 14, which further comprises introducing heat required for the thermal hardening at least partly by the die.

16. The method according to claim 12, which further comprises forming the die from graphite.

17. The method according to claim 1, which further comprises aligning a majority of the carbon fibers parallel to a longitudinal axis of the tapes.

18. The method according to claim 1, which further comprises aligning a majority of the carbon fibers parallel to the moldable surface formations containing the carbon fibers.

19. The method according to claim 1, which further comprises aligning the carbon fibers partly parallel to and partly at an angle of between 20° and 160° to a longitudinal axis of the tapes.

20. The method according to claim 1, which further comprises aligning the carbon fibers partly parallel to and partly at an angle of between 20° and 160° to the moldable surface formations containing the carbon fibers.

21. The method according to claim 6, which further comprises using carbonizable resins as the binder.

22. The method according to claim 1, which further comprises using carbonizable resins for the post-compacting step.

23. The method according to claim 1, which further comprises, after the last carbonizing or graphiting, performing a melt infiltration with a carbide forming element and a subsequent reaction to form a matrix containing the carbide forming element and a carbide thereof at least in an outer layer of the component.

24. The method according to claim 23, which further comprises using silicon as the carbide forming element.

25. The method according to claim 23, which further comprises performing the melt infiltration and subsequent reaction to penetrate entirely the matrix with the carbide forming element and the carbide thereof.

26. A method of using a component, which comprises:

manufacturing a component by performing the method according to claim 1; and

using the component as a batch rack in high temperature processing of workpieces.

27. A method of using a component, which comprises:

manufacturing a component by performing the method according to claim 1; and

using the component as a surface part in an aerospace vehicle.

28. A method of using a component, which comprises:

manufacturing a component by performing the method according to claim 1; and

using the component as a surface part in an aerospace vehicle.

29. A method of using a component, which comprises:

manufacturing a component by performing the method according to claim 1; and

using the component as a as a carrier for optical components.

30. A method of using a component, which comprises:

manufacturing a component by performing the method according to claim 1; and

using the component to build precision machines.